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RESEARCH SUMMARY

This report describes Idaho's forest products industry in the year 1973. Data were gathered as the result of a study requested by industry, the USDA Forest Service, and the Idaho Legislature.

The study covered a high percentage of the firms that operated in Idaho during 1973.

The report describes sources of raw materials and discusses production of lumber, posts and poles, cedar products, and plywood/veneer. Appendix A presents detailed results; Appendix B describes survey methods.

Some of the study's major highlights are:

- Of the 209 forest product firms operating in Idaho during 1973, the study received cooperation from 122 sawmills, 25 posts/pole plants, 40 cedar products manufacturers, 5 plywood/veneer plants, and 2 chipping operations. Fifteen firms did not respond.

- Nearly 2 billion board feet of timber was used by Idaho's forest products industry during 1973.

- Idaho, Shoshone, Clearwater, Bonner, and Kootenai Counties produced almost 60 percent of the timber consumed.

- Sawmills consumed 79 percent of the timber processed in 1973.

- The industry is dominated by a small number of large firms under corporate ownership.

- The USDA Forest Service supplied 45 percent of the timber consumed in 1973.

- Douglas-fir, true firs, and ponderosa pine are the dominant commercial species.

- Most lumber, plywood, veneer, and cedar products produced in Idaho were shipped to consumers in the eastern United States.

CONTENTS

INTRODUCTION

Although forestry is one of Idaho's leading businesses, little information has been published about the industry. This report describes the forest products industry for the year 1973 based on a census of forest products firms operating in Idaho. For this census a firm was defined as a single operating plant at one location. Thus, one company could own and operate more than one firm. Furthermore, only primary forest products firms were surveyed in the census. These firms included sawmills, post and pole plants, cedar products mills, plywood and veneer mills, and chippers. Most loggers (except those directly employed by the firms surveyed) and all secondary manufacturers (mobile home, door, molding, and paper manufacturers, etc.) were excluded. Although 7 percent of the firms queried did not respond, the data adequately represent the industry. A detailed description of the study methods can be found in Appendix B.

The report includes sections describing manufacturing firms, raw material supply and processing, production, and marketing. Although this information is applicable to 1973, it nevertheless provides a useful description and a benchmark from which changes can be judged.

MANUFACTURING FIRMS AND PRODUCTS

Small Sawmills Are the Most Numerous Firms

Of the forest products firms in Idaho, 63 percent were classified as sawmills, 12 percent as post and pole plants, 20 percent as cedar product mills. In addition, five plywood/veneer (3 percent) and three chipping (1 percent) plants existed. Although sawmilling account for the most firms in the forest products industry, the number has declined during the past decade. The plywood/veneer sector, by comparison, has increased in number of firms (Setzer and Wilson 1970; Schuster and others 1974). While some firms produced more than one product (lumber and veneer), most firms specialized in one product.

As shown in table 1, most of the firms surveyed in 1973 were small operations in terms of annual wood consumption. Fifty-eight percent of the sawmills and almost all the post, pole, and cedar plants consumed less than 10 million board feet annually. The plywood/veneer firms were generally larger, and they consumed an average of 50 million board feet annually.

Table 1.--*Idaho's forest products industry by size of firm (M bd. ft./year consumed) and product, 1973*

Size class	Product		
	Lumber	Cedar	Post/poles
MM bd. ft.	*Number of firms*		
Less than 10	67	[1]40	[1]25
10-19	14	--	--
20-29	8	--	--
30-39	10	--	--
40-49	7	--	--
50+	6	--	--
Unknown	10	--	--
Total	122	40	25

[1]Number includes as least one firm from a larger size class added to avoid disclosure of that firm's consumption.

Most Firms Are Located in North Idaho

Most forest products firms are located in Idaho County and the nine counties north of it (fig. 1). Manufacturing plants are also concentrated in southeast Idaho and the Boise Valley. The major reason for areas of concentration is a large supply of nearby timber.

Figure 1.--Location of forest product industry firms in Idaho, 1973.

Most Processing Firms Are Owned by Corporations

Of the 194 firms interviewed, 44 percent were corporations, 17 percent partnerships, and 39 percent single-owner proprietorships. Twenty-nine (15 percent) of the plants included in the survey were owned by six large corporations. Other corporations also owned more than one plant but no partnership or single individual owned more than one plant. Some corporations are multi-state firms with headquarters located in other states.

Nearly 96 percent of the total volume of timber used during 1973 was processed by corporate-owned plants. Many of these corporations were owned by local people, but most of the 1973 volume was used by the six major firms that operated in Idaho.

Most Firms Are Relatively Stable

Firms seldom change ownership or location, as shown in table 2. Most firms have remained at a single location under the present ownership an average of 14 years. Stability of location is particularly notable when comparing corporations (18 years) to single owners (12 years). Ownership stability, however, does not necessarily mean operating stability, as table 3 shows. Sixty percent of the firms reported operating year round; 20 percent operated 6 months or less.

Table 2.--*Firms in Idaho's forest products industry by years in locations and length of ownership, 1973*

Years in location	Years of ownership					
	0-2	3-5	6-9	10-20	21+	Total
	Number of firms					
0-2	17	5	0	1	1	24
3-5	1	16	0	1	1	19
6-9	6	2	17	2	--	27
10-20	4	6	2	33	1	46
21+	1	3	5	7	35	51
Total	29	32	24	44	38	167

Table 3.--*Firms in Idaho's forest products industry by months of annual operation and size of firm, 1973*

Size of firm	Average annual operation, months						
	6	7	8	9	10	11	12
MM bd. ft.	*Number of firms*						
0-4	35	4	3	2	12	7	48
5-9	--	1	--	1	3	1	14
10-19	--	--	--	1	1	1	13
20+	--	--	--	--	1	--	30
Total	35	5	3	4	17	9	105

Forest Industry Employment is Concentrated in North Idaho and in Sawmilling

The information in figure 2 indicates that 75 percent of the 1973 Idaho forest industry employment of 8,118 employees is located in 10 northern counties. Other major centers of employment include Boise, Gem, Fremont, and Lemhi Counties. Employment is typically centered in particular towns: Sandpoint (Bonner County), Lewiston (Nez Perce), Grangeville (Idaho), Bonners Ferry (Boundary), and Emmett (Gem). The communities of Weippe, Potlatch, Kooskia, Moyie Spring, Priest River, St. Maries, and Horseshoe Bend have been historically "timber towns" because timber is the main industry. Of the 8,118 employees reported, 90 percent worked for corporations, and only 6 percent worked for single-owner firms.

The employment figures presented do not include all forestry-related employment.[1] For example, the 739 employees listed as working in logging probably represented less than one-third of the total number in logging, because that sector was not specifically surveyed. Also excluded are the employees of the secondary wood products manufacturers and paper mills, also not surveyed.

Figure 2.--Idaho forest products industry employment by county.

[1]Schuster and others (1974) and Schuster and others (1975) provide additional estimates of forest industry employment as well as comparisons with other Idaho industry employment.

WOOD SUPPLY

Sawmills Consumed 79 Percent of the Timber in 1973

Idaho's forest products industry used 1.9 billion board feet of timber during 1973. When compared to the 1970 forest inventory on commercial timberland in Idaho (USDA 1973), this volume was less than one-hundredth of 1 percent of the net volume of sawtimber but was nearly 97 percent of the net annual growth.

As shown in table 4, sawmills consumed the largest proportion of timber. Plywood/veneer/chip mills consumed 15 percent--and the most timber per firm--while the post/pole and cedar products claimed the other 6 percent.

Table 4.--*Volume of timber, number of firms, and average volume per firm in Idaho's forest products industry, 1973*

Type of firm	Number of firms	Volume	Average volume per firm
		M bd. ft.	
Sawmills	122	1,538,738	12,613
Cedar products	40	51,364	1,284
Post/pole	25	66,763	2,671
Plywood/veneer and chipping plants	7	287,638	41,091
Total	194	1,944,503	10,023

A Few Large Firms Used Most of the 2 Million Board Feet Consumed

The data in figure 3 indicate that the 13 largest firms used 45 percent of the timber while the 30 smallest firms used less than 1 percent of the total volume. This heavy concentration of use by large mills will probably continue to put economic pressure on small operators in competition for timber.

True Firs and Douglas-firs Are the Major Commercial Species

The forest industry firms interviewed provided relatively complete estimates of timber used and identification by species. Only 3 percent of the total volume used was not identified. The data in figure 4 indicate that true firs and Douglas-fir are the dominant species of timber used, accounting for over one-third of the total volume. The firs were followed in importance by ponderosa pine (14 percent), white pine (11 percent) and cedar (9 percent).

The timber species utilized varies among counties (see table 18 page 26). For example, industries in southeast Idaho predominantly use Douglas-fir; firms in western Idaho (Valley and Washington Counties) use mostly ponderosa pine; firms in north Idaho use a mixture of species.

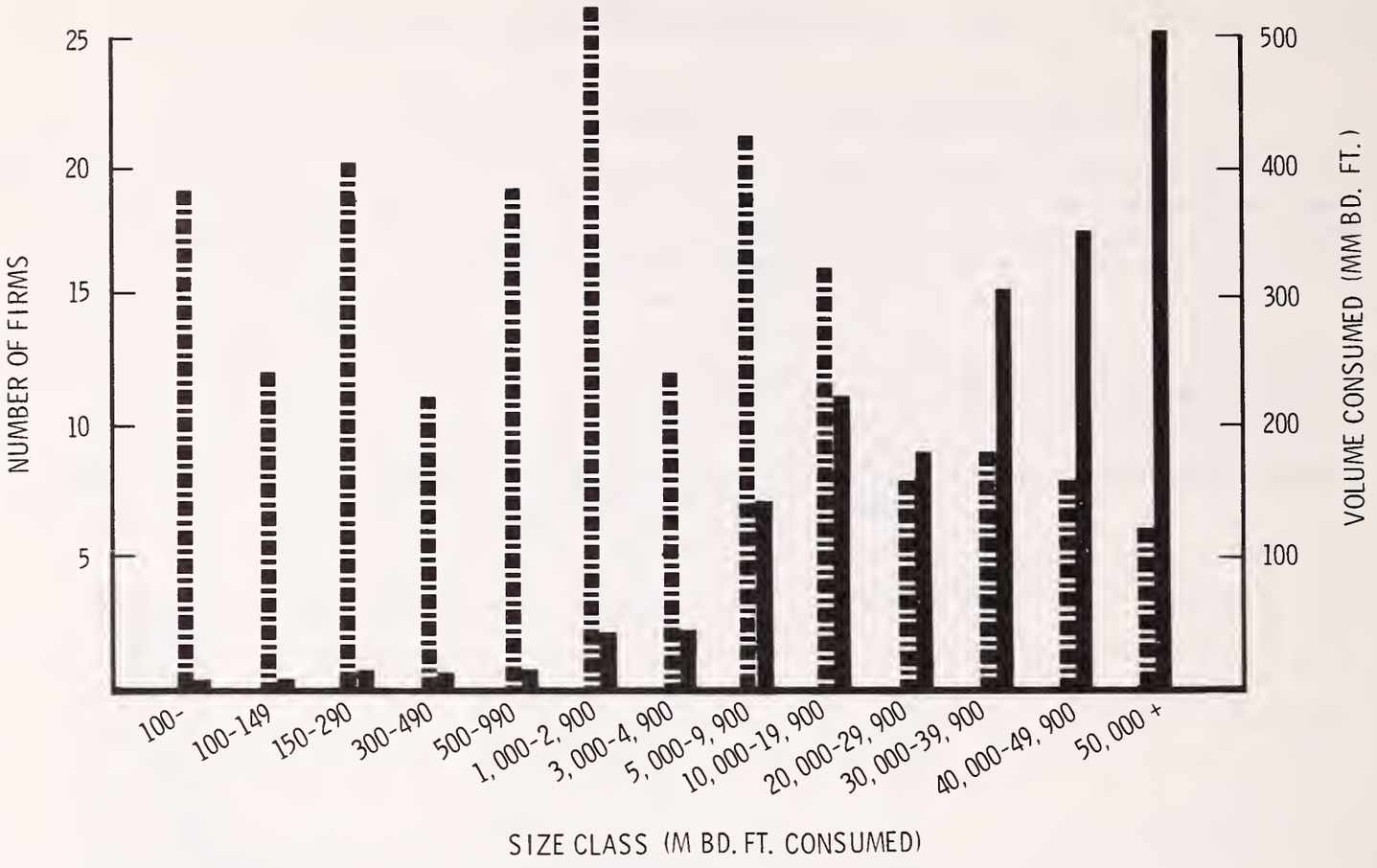

Figure 3.--Number of firms and volume of timber used in Idaho's forest products industry by size class, 1973.

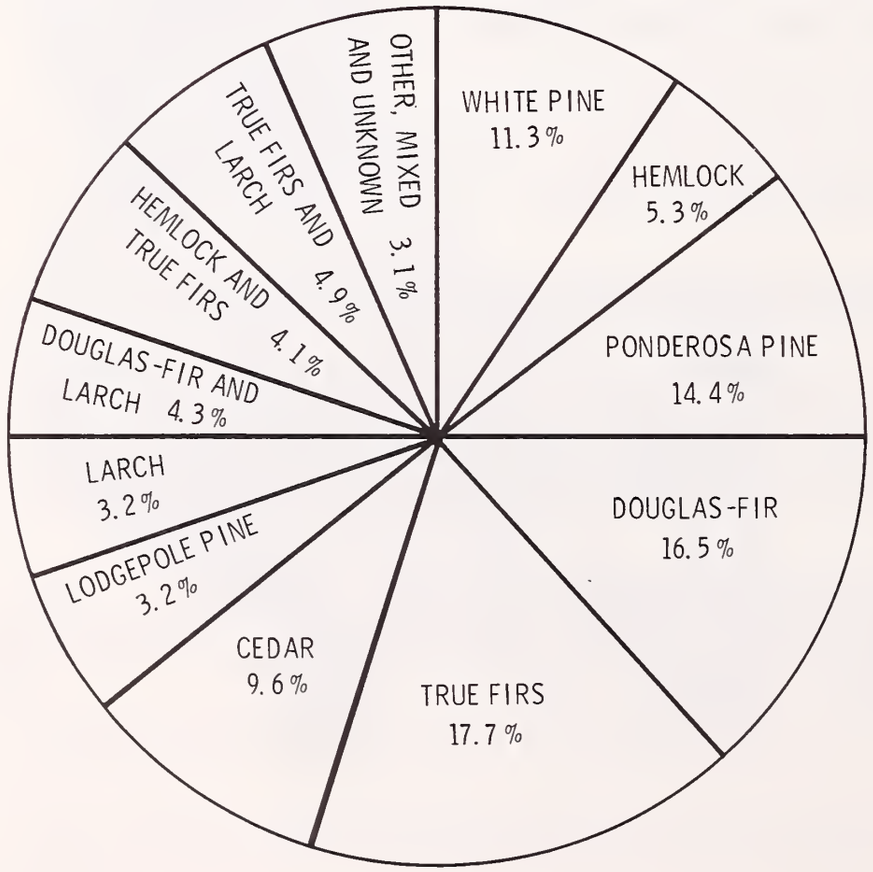

Figure 4.--Percentage distribution of timber used in Idaho's forest products industry by species, 1973.

Firms Consume About Equal Portions of Forest Service and Private Timber

Although the Forest Service administers almost 70 percent of Idaho's commercial forest land (Green and Setzer 1974), only 45 percent of the timber used by the forest products industry came from National Forests. As figure 5 illustrates, private lands produce 42 percent of the timber consumed. This represents a slight increase in private supply from 1967 (38.3 percent) as reported by Koss (1975).

The changing pattern of timber source was also reflected in the data provided by the firms. Forest products firms indicated that although they obtained 56 percent of their timber from Forest Service lands during the past 5 years, they expect to obtain only 49 percent during the next 5 years. Decreased volume is expected to be "offset" by corresponding increases from "other private" lands. In contrast, research by Hatch and others (1976) indicates that the largest increases will come from Forest Service lands.

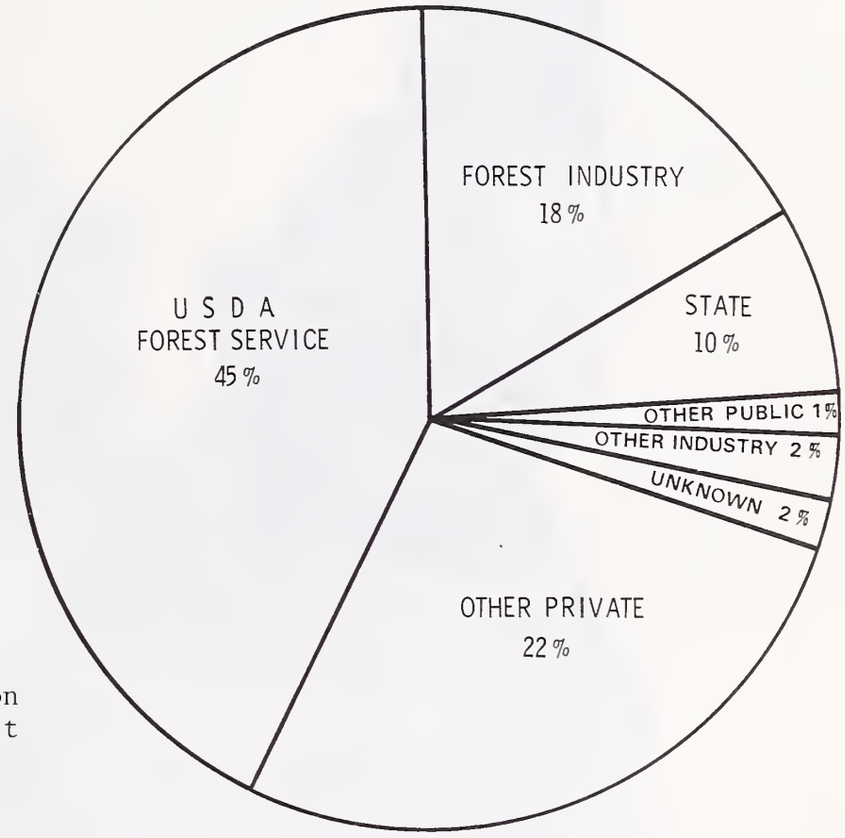

Figure 5.--Percentage distribution of timber used in Idaho's forest products industry by ownership, 1973.

Most Timber is Harvested and Processed in North Idaho

Data in figure 6 indicate that almost 60 percent of the timber used in Idaho originated in five counties--Idaho (9.5 percent), Clearwater (23.5 percent), Shoshone (7.4 percent), Bonner (10.1 percent), and Kootenai (7.9 percent). Approximately 12 percent of the timber used in Idaho was not identified in origin. Most of this volume was used in Valley, Shoshone, Gem, Ada, and Adams Counties, indicating that volumes larger than those reported were harvested in these and neighboring counties. The largest single destination was the Nez Perce-Latah-Lewis Counties processing complex that used 17.9 percent of the State's volume. Other leading manufacturing counties (fig. 7) include Benewah (9.9 percent), Bonner (10.4 percent), Clearwater (6.2 percent), Idaho (10.8 percent), and Kootenai (11.1 percent). These volumes generally follow the same pattern of origin and destination as reported by Koss (1975), but many of the "smaller volume" counties had large differences. These differences may stem from the fact that the people Koss interviewed knew origin and estimated destination, while those we interviewed knew destination and estimated origin. Koss's study does not estimate imports to the State, while this study does not estimate exports to other States.

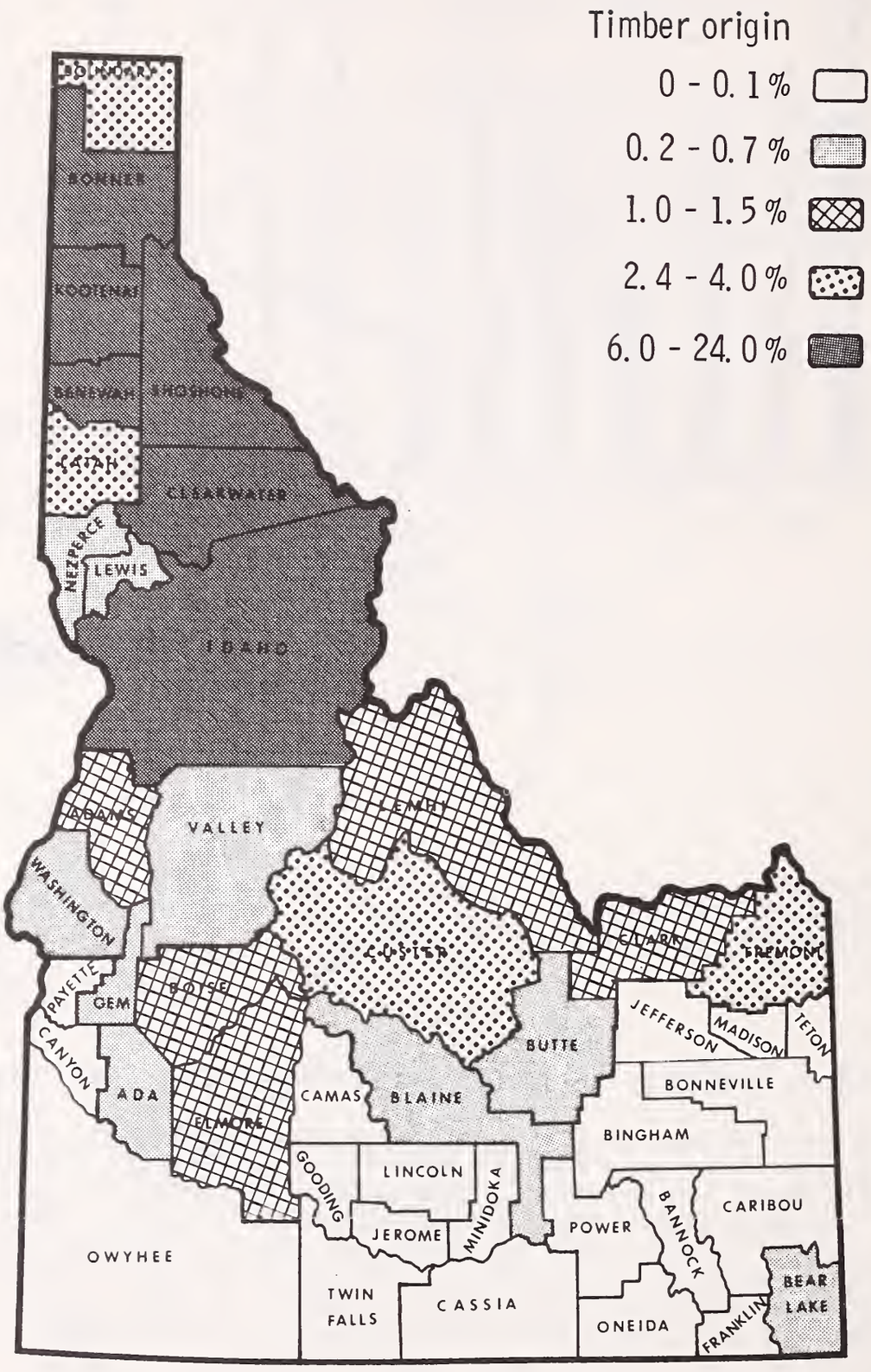

Figure 6.--Origin of timber for Idaho's forest products industry by county and percentage of Idaho timber consumed.

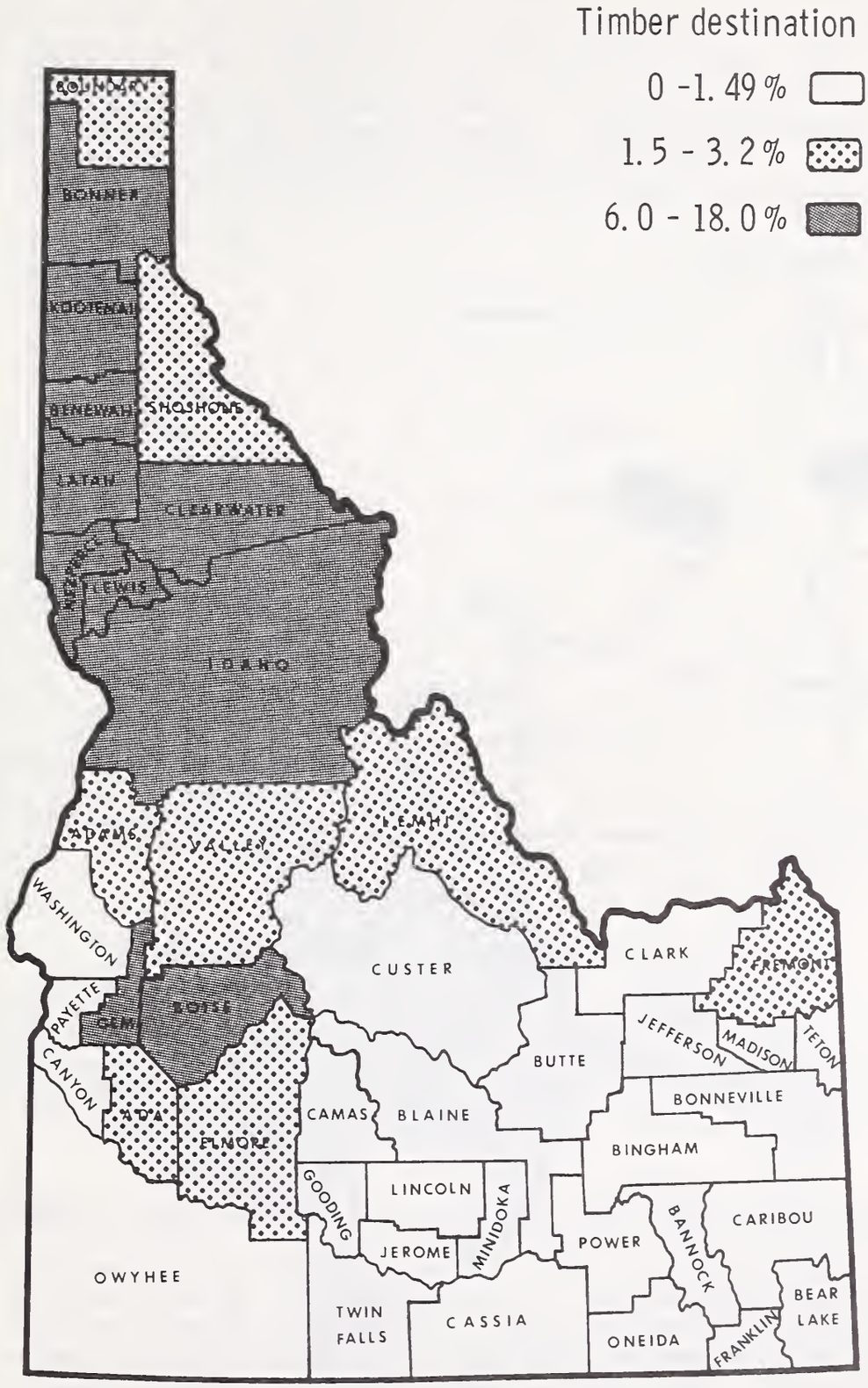

Figure 7.--Timber distribution for Idaho's forest products industry by county and percentage of total consumed.

Nearly 95 Percent of Timber Processed Comes from Idaho

Idaho firms not only buy timber from lands within the State, but also purchase timber from neighboring states (fig. 8). For example, nearly 4 percent of the total volume of timber used in Idaho originates in Washington and is manufactured by firms in the Priest River area of Bonner County. Montana also supplied timber for the Idaho forest products industry--26 million board feet--during 1973. The small volume of imported timber indicates that Idaho's forest industry is relatively insulated from the timber supply in other states. (These volumes do not include the more than 246 million board feet of unidentified origin.) However, a few local areas (Priest River) may be dependent on timber imported from neighboring states.

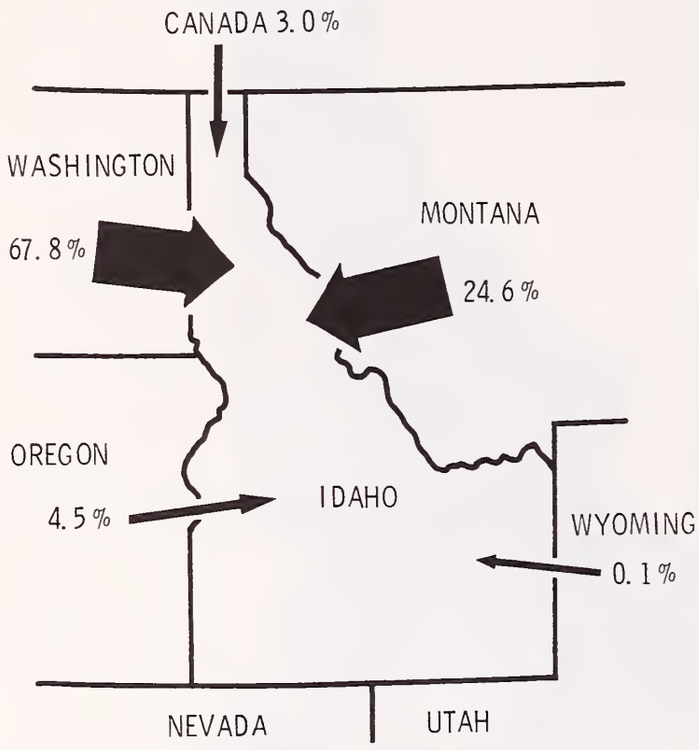

Figure 8.--Percent distribution of timber imports to Idaho's forest products industry by percent of total imports and import origin, 1973.

Log Haul Distances Average 38 Miles

Average and maximum haul distances between mill and source of logs were requested in the survey. Average haul distance was 38 miles, with a range from 0 to 220 miles. The few cases of hauls over 400 miles were shipments of poles. In general, mills in southcentral Idaho had the longest hauls, as shown in figure 9. Kootenai County mills in north Idaho also averaged over 40 miles hauling distance.

Competition and Forest Service Policies Cited as Major Supply Problems

Responses to the question, "What is your major obstacle in obtaining logs?" are categorized in table 22 (page 33). In about 28 percent of the responses, Forest Service environmental and sales restrictions and sale size were the main problems. About 40 percent of the problems related to competition--ranging from high stumpage prices to lack of raw materials. Poor weather, lack of financing, and high logging costs were other factors. Sixteen percent of the firms either had no problems or did not respond.

Cedar products and pole/post manufacturers often charged that Government sale policies favored sawmills. They thought that sales should be designed so poles or cedar would be harvested before the sawlogs were sold. They charged that valuable cedar trees were being burned as slash.

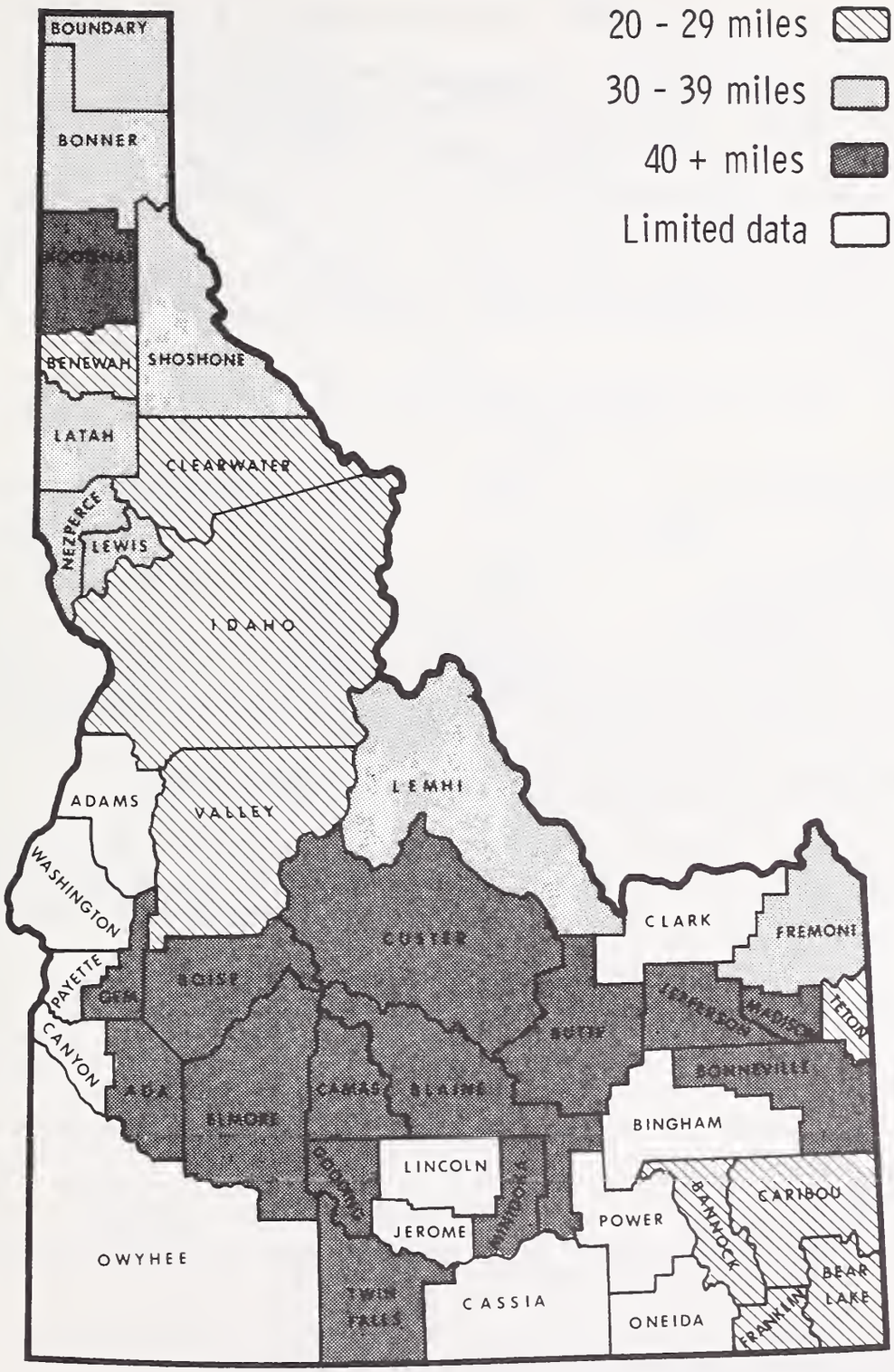

Figure 9.--Average log haul distance by county of destination and distance class, 1973.

FOREST INDUSTRY PRODUCTION

Lumber Industry

LUMBER PRODUCTION TOTALED APPROXIMATELY 2 BILLION BOARD FEET

Seventy-four sawmills reported producing 1.3 billion board feet of lumber from 1.0 billion board feet of logs, for an overrun of approximately 32 percent (table 5). If this average overrun is applied to the total volume used by sawmills, an estimated 2 billion board feet (1.32 x 1,538,733 M bd. ft. from table 4) of lumber was produced in Idaho during 1973. This is close to the 1.91 billion board feet production estimated by the Western Wood Products Association (1973) for Idaho. This volume represents approximately 5 percent of the lumber produced nationally. Historically, Idaho has maintained this share of the national market as the fourth leading lumber producing state--surpassed only by Oregon, Washington, and California (Western Wood Products Association 1975).

Table 5.--*Timber consumption, lumber production, and overrun (lumber ÷ timber) for 74 Idaho sawmills by region (table 16), 1973*[1]

Area	Timber used	Lumber produced	Number of firms reporting	Overrun
		- - - - - *M bd. ft.* - - - -		
Region I (North)	479,361	667,225	31	1.39
Region II (Northcentral)	235,774	302,897	9	1.28
Region III (Southwest)	218,924	261,850	13	1.19
Region V and V (Southwest)	13,433	16,378	11	1.22
Region VI (Southcentral)	66,851	96,057	10	1.43
Total	1,014,343	1,344,407	74	1.32

[1]See table 16 page 24 for counties within regions.

SAWMILL NUMBERS DECLINE WHILE MILL OUTPUT RISES

Table 6 reflects a steady decline in the number of sawmills operating in Idaho from 1959 through 1973, with an increase of 184 percent in the volume of timber used per firm. If growth in the average mill size is due to economies of scale, the number of firms may continue to decline.

Table 6.--*Number of sawmills and average volume used by Idaho sawmills, 1959, 1962, and 1973*[1]

Year	Number of mills	Average volume per mill
		- - - - *M bd. ft.* - - -
1959	311	5,174
1962	193	7,855
1973	122	14,708

[1]Source for 1959 and 1962 data: Wilson and Spencer 1967.

LUMBER IS PRIMARILY SOLD TO EASTERN MARKETS

Sawmills reported selling nearly two billion board feet of lumber during 1973 (table 23 page 34). Of this total (fig. 10), 30.8 percent was sold to the Midwest, 22.7 percent to the East Coast, and 13.1 percent to firms in Idaho. Thus, the Eastern United Sates and local communities are the two primary markets for Idaho's lumber. Denver, Colo., received most of the lumber reported as being shipped to "other western states."

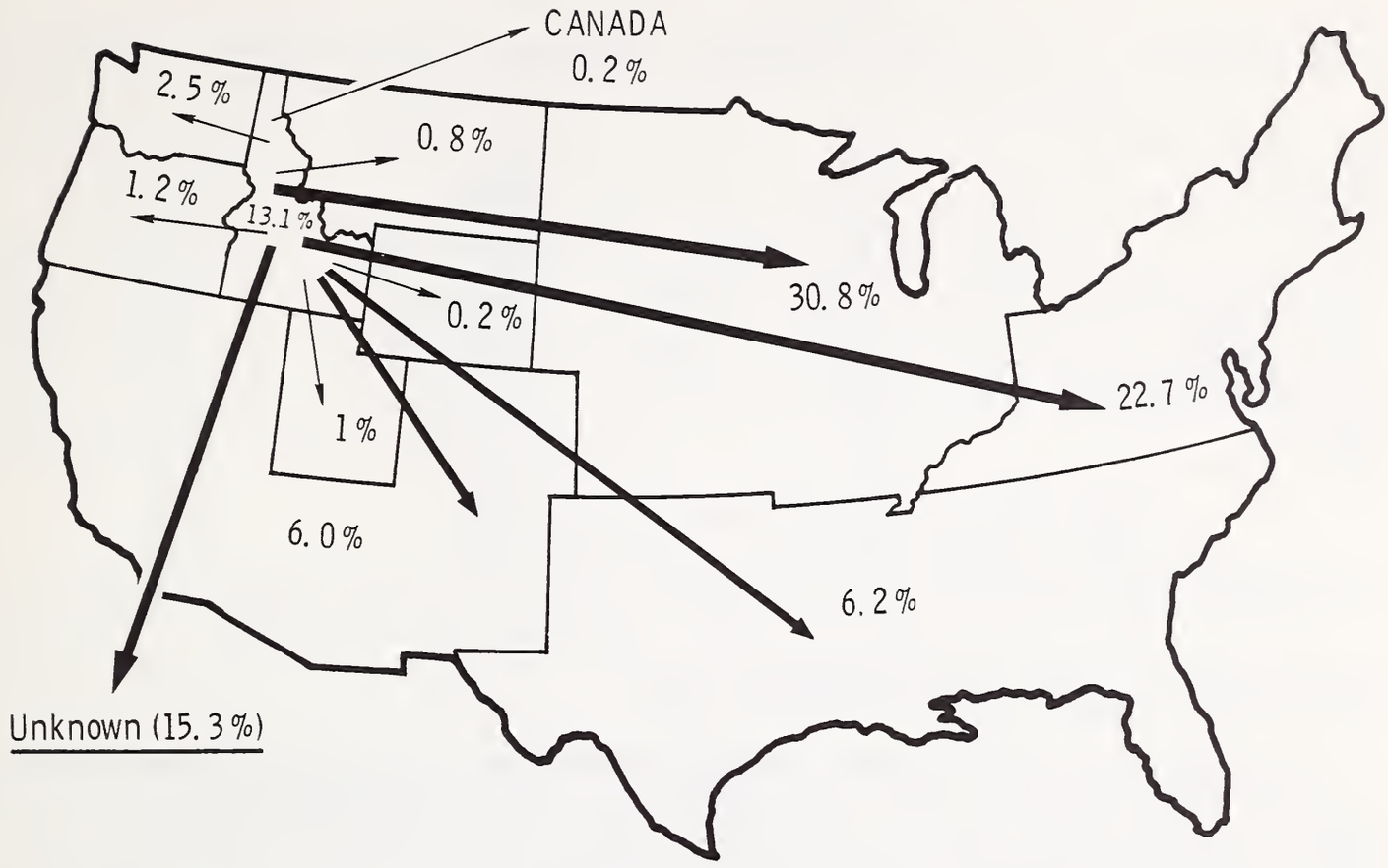

Figure 10.--Percentage distribution of Idaho lumber by destination, 1975.

SAWMILLING IS A BIG BUSINESS

The data in table 7 show expenditures for roundwood, wages, salaries, and operating expenses, and the total revenue received by sawmills. These data indicate manufacturing costs exceeded $143 per thousand board feet exclusive of returns to capital investments, such as land and buildings. For firms to break even on variable costs during 1975, the price of lumber would have to be $142.63 per M bd. ft. The average lumber price reported was $218.35 per M bd. ft. However, average returns minus the average costs do not indicate profits because: (1) different firms are commonly involved in various cost and return categories, (2) no allowance is made for changes in inventory, and (3) the cost of the fixed factors (primarily owner's salaries, management, and return to invested capital) is not included. Furthermore, these data are probably the least reliable of any obtained and do not include taxes.

Several inferences can be made from the expense and revenue data. First, 60 percent of the variable costs of operating a sawmill are spent for roundwood, and more than 25 percent for wages and salaries. This would indicate that timber pricing policies and bidding procedures can have a large impact on the profitability of a sawmill. Second, if the firms paid an average of $142.63 per M bd. ft to produce lumber, nearly 220 million dollars ($142.63/M bd. ft. x 1,538,733 M bd. ft. from table 4) would have been spent, and nearly 336 million dollars ($218.35/M bd. ft. x 1,538,733 M bd. ft.) worth of products would have been sold by the sawmilling industry in 1975.

Table 7.--*Average costs and revenues for Idaho sawmills, 1973*

Cost/return	Number of firms reporting	Average per firm	Average per M bd. ft.
		Dollars	
Wages and salaries	55	662,111	36.69
Roundwood	65	1,018,375	83.85
Rentals	8	73,028	2.90
Repair	35	70,465	5.09
Insurance	33	27,672	1.53
Marketing expense	12	78,591	5.82
Transportation	11	143,955	8.58
Contract labor	9	382,167	19.92
Operating expenses	54	82,094	5.66
Supplies	24	124,027	6.30
Other expenses	25	267,203	14.78
Total costs	38	2,275,389	142.63
Total revenue	60	2,657,206	218.35

EQUIPMENT VARIES WITH SAWMILL SIZE

The type, size, and amount of equipment used by Idaho sawmills varies considerably, as illustrated in table 8. These data indicate a strong relationship between equipment used and firm size. No small (less than 3 million bd ft) mill had a chipper or kiln, while most larger sawmills had at least one of each. The data in table 8 may also indicate the size a firm must attain before certain types of equipment can be added profitably. For example, a burner, chipper, band headsaw, and debarker appear to be justified only for mills using more than 5 million board feet of timber; use of kiln instead of air drying apparently requires a firm larger than 10 million board feet. Since larger mills use most of the timber and almost always have kilns, edgers, planers, and sanders, probably most of the lumber produced in Idaho is finished and ready for use.

Table 8.--*Number and type of equipment used by sawmills in Idaho, by size of firm (by M bd. ft. consumed), 1973*

	Size (M bd. ft. consumed annually)									
Equipment	Less than 500	500-1,000	1,000-3,000	3,000-5,000	5,000-10,000	10,000-20,000	20,000-30,000	30,000-40,000	More than 40,000	Total
Circle headsaw	24	7	2	3	8	4	0	1	0	49
Double circle headsaw	7	2	4	1	3	1	0	0	0	18
Band headsaw	0	2	2	1	9	9	7	12	17	59
Resaw	1	2	1	5	6	6	6	7	15	49
Chipper	--	--	--	2	10	8	7	5	10	42
Chipper headrig	--	--	--	--	--	1	3	5	2	11
Edger	20	10	8	6	16	15	7	9	20	111
Trimmer	4	5	7	5	15	10	5	8	15	74
Planer	14	3	8	2	15	14	5	8	20	90
Kiln	--	--	--	--	7	19	10	28	145	209
Burner	--	2	2	6	13	11	4	5	6	48
Peeler/debarker	1	1	--	2	11	13	7	7	13	55
Number of firms reporting	31	11	8	5	18	13	7	8	10	111

The Plywood and Veneer Industry

Plywood and veneer firms interviewed consumed 244,199 M bd. ft. of timber to produce 546,817 thousand square feet of plywood and veneer during 1973. Most of this volume was shipped to the Midwest (36 percent), the South (17.5 percent), and East Coast (17.6 percent), with 22.5 percent of unknown shipping destination.

Four of the five plywood/veneer plants that operated during 1973 provided some of the cost/return information requested. These four firms paid more than $10.3 million in wages and salaries, an amount greater than the combined total wages and salaries paid by all post/pole and cedar product firms. Although plywood/veneer production occupies comparatively few plants, by other criteria (wages, volume of timber used, sales), it is second in importance to sawmilling in Idaho's forest products industry. If past trends continue, this segment of the industry may eventually surpass sawmilling in economic importance.

The Post and Pole Industry

The 25 post/pole firms interviewed reported using 66,763 M bd. ft. of timber during 1973. Some firms are large and use large volumes of timber, but many firms are part-time operations using very small volumes of timber.

BONNER AND BOUNDARY COUNTIES ARE THE LEADING PRODUCER OF POLES/POSTS

Nearly 70 percent of the more than one million posts produced during 1973 were manufactured by firms in Boundary and Bonner Counties. Other counties that had post manufacturers included Ada, Elmore, Fremont, Lemhi, and Jefferson. Most of these firms are located near large stands of lodgepole pine, the primary species utilized. By comparison, more than 300,000 poles were manufactured during 1973, with leading producers located in Bonner, Benewah, Ada, Elmore, Fremont, and Bonneville Counties.

MOST POSTS AND POLES SOLD IN WESTERN MARKETS

Approximately 90 percent of the poles and 85 percent of the posts produced in Idaho are sold in the Western States. Some areas produce special poles--hop poles near Boise and potato cellar poles in southeast Idaho--but most of the poles are produced for utility companies.

POLE/POST SALES TOTAL APPROXIMATELY $14 MILLION

Data in table 9 indicate that manufacturers had large gross revenues during 1973. Approximately one-half of the total variable costs is spent for roundwood. Although other expenses vary among individual firms, consistently large expenditures were recorded for wages and salaries, contract labor, and supplies.

If the costs and returns in table 9 are assumed representative, then the industry spent $4.3 million for roundwood and sold $14.0 million in products during 1973. However, generally the data are for above average size firms (3,351 M bd. ft. for table 9 firms versus 2,671 M bd. ft. for all firms) and thus may not be representative. Most of the total sales by post and pole operators were concentrated in a few large firms.

Table 9.--*Costs and revenue for Idaho post/pole operators, 1973*

Cost/return	Number of firms reporting	Average per firm	Average per M bd. ft.
		Dollars	
Wages and salaries	10	125,669	39.68
Roundwood	15	156,822	65.12
Rent	2	3,500	1.78
Repair	8	18,351	6.18
Insurance	7	9,853	2.81
Marketing	4	5,450	1.11
Transportation	4	23,700	4.97
Contract labor	4	77,207	17.73
Operating expenses	10	15,650	6.30
Supplies	7	36,763	12.03
Other	6	12,946	4.72
Total costs	12	491,468	130.28
Total revenue	14	727,360	210.49

POST/POLE EQUIPMENT VARIES AMONG MANUFACTURERS

The equipment used by post/pole operators is relatively simple for the major conversions occur during logging. The most common equipment include chainsaws and peelers (18 of the 26 operators used peelers or debarkers). Five operators owned headsaws, one used an edger, and two used trimmers. More than half of the operators had the capability to treat or preserve the poles and posts produced--with facilities varying from a soaking barrel to elaborate pressurized systems.

Cedar Products Industry

Cedar product firms used 51,364 M bd. ft. of timber during 1973. They were located in north Idaho, with the largest concentration of firms in Clearwater, Latah, and Benewah Counties. In general, this industry is characterized by small, independent private firms.

CEDAR PRODUCTS MARKETS NOT CLEARLY DEFINABLE

Many of the cedar processors interviewed did not estimate the volume or destination of products sold. Those firms reporting cedar products sales, however, shipped their products to the same primary areas as the lumber producers--the Midwest and Eastern United States.

CEDAR PRODUCT SALES TOTAL APPROXIMATELY $12 MILLION

Assuming the average cost and return data in table 10 are indicative of the industry, more than $12 million ($235.64 x 51,364 M bd. ft.) of material was sold, while payments were made of $3 million for wages and salaries, $4 million for roundwood, and $11.75 million for manufacturing costs. When measured by most criteria, this industry is not substantial, but it does provide employment for many independent operators.

Table 10.--*Costs and returns for Idaho cedar products firms, 1973*

Cost/return	Number of firms reporting	Average per firm	Average per M bd. ft.
		Dollars	
Wages and salaries	17	107,498	58.00
Roundwood	16	115,231	74.22
Rentals	2	1,477	.98
Repair	6	15,720	10.02
Insurance	3	5,632	1.98
Marketing	2	32,710	10.72
Transportation	5	58,236	31.60
Contract labor	2	5,070	5.63
Operating expenses	8	6,403	7.46
Supplies	3	1,407	1.17
Other	2	401,550	131.65
Total cost	12	284,632	228.65
Total revenue	15	354,506	235.64

CEDAR PROCESSORS HAVE LIMITED EQUIPMENT

As shown in table 11, one-third of the cedar processors had the capability of sawing lumber (headsaws and edger); however, many operators did much of the manufacturing with hand tools such as axes and wedges.

Table 11.--*Number and type of equipment used by Idaho cedar processors, 1973*

Type of equipment	Number
Circle headsaws	13
Band headsaws	3
Other saws	16
Edgers	15
Trimmers	3
Burners	14
Splitters	6
Number of firms reporting	35

Residues

Setzer and Wilson (1970) reported 92 million cubic feet (2.6 million cubic meters) of plant by-products produced by Idaho firms in 1966 and 38.9 million cubic feet (1.1 million cubic meters) in 1962. These volumes compare with the more than 203 million cubic feet (5.7 million cubic meters) reported sold during 1973 and the 296 million cubic feet (8.4 million cubic meters) reported produced. While some of this increase between surveys may be due to increased production of primary products, much of the difference is probably due to the estimation procedure used. One reason for the difference in 1973 between production and sales is the use of residues for energy production within the firm.

RESIDUES ARE MAINLY PROCESSED INTO PULP CHIPS

Data in table 12 indicate that nearly 60 percent of residues are processed into pulp chips. Most of the remaining residue is bark and sawdust. Residue volumes per thousand board feet are, with few exceptions, higher than those reported in other sources (Institute of Forest Products 1976; Bergvall and Gedney 1970; Manock and others n.d.). This suggests that some volumes in table 12 may be unrealistically high (bark, sawdust, shavings) and should be considered accordingly.

Table 12.--*Number of firms and amount of residue produced by Idaho's forest products industry, 1973*

Type of residue	Number of firms	Units of residue (200 ft^3= 5.66 m^3)	Units per M bd. ft. processed
Pulp chips	43	864,603	0.6587
Particle board chips	2	17,400	.3506
Coarse chips	1	4,558	.0836
Bark	8	300,013	.7274
Log trim	3	27,450	.1399
Sawdust	17	200,443	.2904
Shaving	11	64,268	.1355
Sander dust	1	663	.0442

IDAHO FIRMS USE MOST OF THE PROCESSED RESIDUES

Three chipping plants and 43 sawmills reported selling 1,016,542 units of residuals (chips, bark, shavings, sawdust) as pulp, bedding, particle board, and other products during 1973. Nearly 60 percent of the total volume sold was shipped to locations in Idaho. Other major sales went to western Washington (fig. 11).

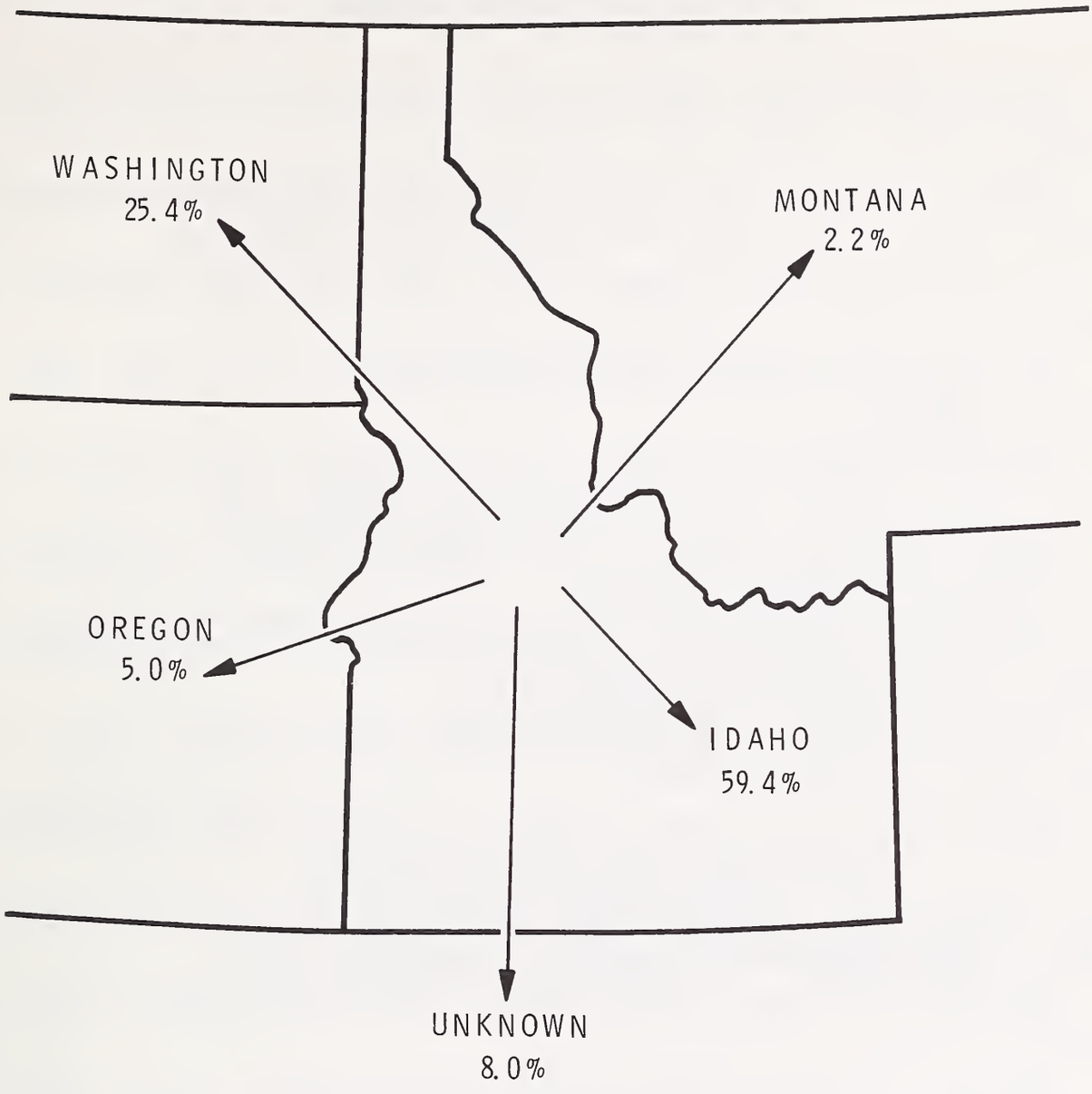

Figure 11.--Percentage distribution of residues produced by Idaho's forest products industry by origin and destination, 1973.

CONCLUSION

This paper represents the most detailed overview of Idaho's forest products industry published to date. Although it may be viewed as only 1 year in a constantly changing industry, this report can serve as a base from which changes can be measured in future studies.

Idaho's forest industry has been the leader among the Rocky Mountain States for some time, and it will probably continue to be one of America's leading forest product producing areas. In the future, competition from other areas--the South and West Coast--may well force Idaho's industry to modernize and become more productive.

Although the report has outlined some of the forest products industry's problems and strengths, much remains unknown. The work reported here may be useful as a basis for further research in determining the importance of forestry in Idaho and may also help resolve many of the difficult questions faced by firms within the industry.

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APPENDIX A

SELECTED TABULAR DATA FOR IDAHO'S FOREST PRODUCTS

Table 13.--*Annual operation (months) for Idaho firms, by ownership, 1973*

Ownership	Average	Standard deviation
Single owners	7.7	4.5
Partnerships	8.2	4.2
Corporations	11.5	1.4
Total	9.4	3.9

Table 14.--*Years in present location and ownership for Idaho forest products firms, 1973*

Ownership	Years in present location		Years in present ownership	
	Average	Standard deviation	Average	Standard deviation
Single ownerships	11.7	13.3	11.1	10.3
Partnerships	10.1	10.7	9.6	10.5
Corporations	17.5	17.0	13.0	14.4
Total	13.7	14.8	11.6	12.2

Table 15.--*Employment in Idaho's forest products industry by type of firm, 1973*

Ownership	Number of firms	Average number of employees/8-hour shift		Average number of employees/year	
		Total	Average per firm	Total	Average per firm
Single owner	77	437	5.7	471	6.1
Partnership	33	306	9.2	318	9.6
Corporation	84	6,605	78.6	7,329	87.3
Total	194	7,348	37.9	8,118	41.8

Table 16.--*Employment and number of firms by type, region, and county, 1973*

Region/County	Average number of employees	Number of firms		
		Lumber product	pole/post	cedar
Region I	3,063	50	6	14
Benewah	531			
Bonner	834			
Boundary	341			
Kootenai	1,113			
Shoshone	244			
Region II	3,031	21	2	26
Clearwater	517			
Idaho	733			
Latah/Nez Perce/Lewis	1,781			
Region III	1,534	21	5	--
Ada/Elmore	214			
Adams	116			
Boise/Gem	885			
Canyon/Washington	162			
Valley	157			
Owyhee/Payette	0			
Region IV	47	3	2	--
Blaine/Camas/Gooding/Twin Falls	47			
Cassia/Jerome/Lincoln/Minidoka	0			
Region V	27	11	--	--
Bannock/Caribou/Franklin	15			
Bear Lake	12			
Bingham/Oneida/Power	0			
Region VI	416	23	10	--
Bonneville/Jefferson/Madison	88			
Butte/Custer	37			
Fremont	130			
Lemhi	141			
Teton	20			
Clark	0			
Total	8,118	129	25	40

Table 17.--*Volume of logs used by Idaho's forest products industry by region and county, 1973 (M bd. ft., Scribner scale)*

Location	Sound live logs	Sound dead logs	Cull pulp	Total
Region I	641,057	15,692	62,657	719,406
Benewah	143,363	2,606	49,908	191,877
Bonner	191,347	3,150	8,249	202,746
Boundary	51,230	202	4,100	55,532
Kootenai	209,403	5,514	--	214,917
Shoshone	45,714	4,220	4,400	54,334
Region II	603,360	7,013	68,427	678,800
Clearwater	109,650	159	10,637	120,446
Idaho	191,256	5,165	13,438	209,859
Latah/ Nez Perce/Lewis	302,454	1,689	49,352	348,495
Region III	312,882	1,098	--	313,980
Ada/Elmore	46,989	--	--	46,989
Adams	43,987	5	--	43,992
Boise/Gem	141,926	--	--	141,926
Canyon/Washington	19,267	267	--	19,534
Valley	60,713	826	--	61,539
Region IV	9,493	12	--	9,505
Blaine/Camas/Gooding/ Minidoka/Twin Falls	9,493	12	--	9,505
Region V	5,802	1	--	5,803
Bannock/Caribou/Franklin	1,302	--	--	1,302
Bear Lake	4,500	1	--	4,501
Region VI	97,848	11,092	--	108,940
Bonneville/Jefferson/ Madison	27,855	819	--	28,674
Butte/Custer	10,011	965	--	10,976
Fremont	31,332	7,115	--	38,447
Lemhi	28,510	1,517	--	30,027
Teton	140	676	--	816
Unallocated volume	--	--	--	108,069
Totals	1,670,442	34,908	131,084	1,944,503

Table 18.--*Volume (M bd. ft.) by species consumed by Idaho forest products by county, 1973*

County	Douglas-fir	Hemlock	True firs	White pine	Spruce	Ponderosa pine	Cedar	Lodgepole pine	Larch	Hardwoods
Boundary	5,082	1,281	3,114	2,878	6,588	2,732	7,366	6,819	18,891	
Bonner	28,764	15,948	16,819	40,287	3,790	15,221	34,558	5,817	19,806	50
Benewah	255	17,647	55,576	30,997	4,322	9,113	37,928	3,955		
Kootenai	8,729	1,450	54,013	50,787	2,416	23,068	22,387	385	6,389	29
Shoshone	3,176	1,000	4,896	15,092		2,205	6,363		2,111	
Region I	46,006	37,326	134,418	140,041	17,116	52,339	108,602	16,976	47,197	79
Clearwater	15,050		33,315	23,801	681	5,115	26,840	165	220	
Idaho	28,473		52,984	12,131	10,068	64,756	6,338	16,010	8,063	
Latah/Lewis/ Nez Perce	5,957	60,390	89,005	20,883	2,487	18,478	43,176	168		
Region II	49,480	60,390	175,304	56,815	13,236	88,349	76,354	16,343	8,283	
Ada/Elmore	11,106		5,000			29,096		1,756	31	
Adams	15,903		5,679		12,106	11		671	622	
Boise/Gem	52,444		11,870	1,881	957	67,740		3,775	3,258	
Canyon/ Washington	6,540		2,180		920	8,100		534	1,260	
Valley	17,213		8,238		10,383	22,251		1,852	1,602	
Region III	103,206		32,967	1,881	24,366	127,198		8,588	6,773	
Region IV	7,534				419			1,552		
Bannock/Franklin/ Caribou	1,098				2			71		33
Bear Lake	1,990		585		200			1,366		
Region V	3,088		683		202			1,437		33
Bonneville/Jefferson/Madison	23,359			215	114			4,986		
Butte/Custer	10,141				215	250		330		40
Fremont	30,799				3,990			7,648		
Lemhi	23,301				3,990			2,736		
Teton	213		16					587		
Region VI	87,813		16	215	4,319	250		16,287		40
MultiCounty	25,304	5,544		21,216	197	12,639	1,997	129		
Total	322,431	103,260	343,388	220,168	59,855	280,775	186,953	61,312	62,253	152

(con.)

Table 18.--*Volume (M bd. ft.) by species consumed by Idaho forest products by county, 1973*

County	Douglas-fir lodgepole pine	Douglas-fir larch	Hemlock True firs	True firs white pine	True firs larch	Spruce lodgepole pine	Ponderosa lodgepole pine	Hemlock white pine	Mixed	Unknown	Total
Boundary					281	320				180	55,532
Bonner		15,023	3,180				600	600	900	1,383	202,796
Benewah		17,725			13,385					974	191,877
Kootenai		27,443	4,979	1,500	11,342					1	214,918
Shoshone		7,003				1,376		11,112			54,334
Region 1		67,194	8,159	1,500	25,008	1,696	600	11,712	900	2,538	719,407
Clearwater		165			11,423					3,671	120,446
Idaho		3,900			7,136						209,859
Latah/Lewis/ Nez Perce		12,593	9,663		49,755					35,940	348,495
Region II		16,658	9,663		68,314					39,611	678,800
Ada/Elmore											46,989
Adams					2,000		7,000				43,992
Boise/Gem											141,925
Canyon/ Washington											19,534
Valley											61,539
Region III					2,000		7,000				313,979
Region IV											9,505
Bannock/Franklin/ Caribou											1,302
Bear Lake	360										4,501
Region V	360										5,803
Bonneville/Jefferson/Madison											28,674
Butte/Custer											10,976
Fremont											38,447
Lemhi											30,027
Teton											816
Region VI											108,940
MultiCounty			22,328							18,715	108,069
Total	360	83,852	40,150	1,500	95,322	1,696	7,600	11,712	900	60,864	1,944,503

Table 19.--*Volume (M bd ft) of timber by ownership used by Idaho's forest product industry, 1973*

Location	State	Bureau of Land Management	Forest Service	Other public	Owned	Other industry	Other private	Unknown	Total
Benewah	32,305	481	42,925		40,815	18,532	54,545	2,274	191,877
Bonner	20,483		51,104	1,634	19,539	2,624	91,819	15,543	202,746
Kootenai	23,240	2,666	68,200	2,404	57,879		53,750	6,778	214,917
Boundary	3,404		27,529	2,400	8,031	1,200	12,968		55,532
Shoshone	3,494		27,354		6,154	2,016	15,080	236	54,334
Region I	82,926	3,147	217,112	6,438	132,418	24,372	228,162	24,831	719,406
Clearwater	26,678	73	25,094	111	34,697	7,627	18,166	8,000	120,446
Idaho	17,669	1,630	133,922	903	18,892		36,738	105	209,859
Latah/Nez Perce/Lewis	41,274	2,270	98,018		150,767	6,732	49,415	19	348,495
Region II	85,621	3,973	257,034	1,014	204,356	14,359	104,319	8,124	678,800
Ada/Elmore	3,264		41,475		720	27	1,503		46,989
Boise/Gem	7,848	1,960	93,137		7,526		29,807	1,648	141,926
Adams	1,827		33,349		2,842		5,974		43,992
Valley	3,370	84	34,030		8,271		15,302	482	61,539
Canyon/Washington			18,834				700		19,534
Region III	16,309	2,044	220,825		19,359	27	53,286	2,130	313,980
Cassia/Blaine/Gooding/ Minidoka/Twin Falls	415	159	8,921				10		9,505
Region IV	415	159	8,921				10		9,505
Bannock/Franklin/Caribou	510		334	225	33		200		1,302
Bear Lake			3,376		100		1,025		4,501
Region V	510		3,710	225	133		1,225		5,803
Bonneville/Jefferson/Madison			27,143		483		1,048		28,674
Butte/Custer			10,976						10,976
Fremont	300		38,007				140		38,447
Lemhi	850	850	28,327						30,027
Teton			674		120		22		816
Region VI	1,150	850	105,127		603		1,210		108,940
MultiCounty	14,500		56,970	720	1,870	570	23,340	5,099	108,069
TOTAL	201,431	10,173	869,699	8,397	358,739	39,328	416,552	40,184	1,944,503

Table 20.--*Origin and destination of timber used (M bd. ft.) by the Idaho forest products industry by county, 1973*

Destination	Origin													
	Ada	Adams	Bannock	Bear Lake	Benewah	Bingham	Blaine	Boise	Bonner	Bonneville	Boundary	Butte	Camas	Caribou
Boundary									1,082		39,802			
Bonner					1,881				114,965		4,370			
Benewah					89,640									
Kootenai					14,796				7,038		3,099			
Shoshone					1,062									
Region I					107,379				123,085		47,271			
Clearwater														
Idaho														
Latah/Lewis/ Nez Perce					14,114									
Region II					14,114									
Ada/Elmore							11,000							
Adams		16,222												
Boise/Gem	9,359							21,117						
Canyon/Washington		7,400												
Valley														
Region III	9,359	23,622					11,000	21,117						
Region IV							1,514						795	
Bannock/Franklin/ Caribou			557			4				64				300
Bear Lake				4,461										40
Region V			557	4,461		4				64				340
Bonneville/Jefferson/Madison										47		50		
Butte/Custer												5,063		
Fremont														
Lemhi														
Teton														
Region VI										47		5,113		
Unknown									23,775		30,260			
Total	9,359	23,622	557	4,461	121,493	4	12,514	21,117	196,860	111	77,531	5,113	795	340

(con.)

Table 20.--*Origin and destination of timber used (M bd. ft.) by the Idaho forest products industry by county, 1973*

Destination	Origin									
	Cassia	Clark	Clear-water	Custer	Elmore	Franklin	Fremont	Gem	Idaho	Jefferson
Boundary										
Bonner			5,910						2,285	
Benewah			28,105							
Kootenai			17,502							
Shoshone			8,195							
Region I			59,712						2,285	
Clearwater			111,846						600	
Idaho			27,057						173,479	
Latah/Lewis/ Nez Perce			258,816						4,105	
Region II			397,719						178,184	
Ada/Elmore					15,000		78			
Adams									4,150	
Boise/Gem								4,679		
Canyon/Washington									267	
Valley									400	
Region III					15,000		78	4,679	4,817	
Region IV	90			195	6,356		315			
Bannock/Franklin Caribou						225	33			
Bear Lake										
Region V						225	33			
Bonneville/Jefferson/Madison		17,774					9,470			100
Butte/Custer	650	1,668		3,595						
Fremont		962					37,485			
Lemhi				3,400						
Teton							100			
Region VI	650	20,404		6,995			47,055			100
Unknown										
Total	740	20,404	457,431	71,901	21,356	225	47,481	4,679	185,286	100

(con.)

Table 20.--*Origin and destination of timber used (M bd. ft.) by the Idaho forest products industry by county, 1973*

Destination	Origin							
	Kootenai	Latah	Lemhi	Lewis	Nez Perce	Power	Shoshone	Teton
Boundary								
Bonner	7,905	537					1,726	
Benewah	16,407	6,114					45,211	
Kootenai	94,181						76,802	
Shoshone	1,000	360					10,736	
Region I	119,493	7,011					134,475	
Clearwater								
Idaho				7,645	1,678			
Latah/Lewis/ Nez Perce		54,980			3,918		4,286	
Region II		54,980		7,645	5,596		4,286	
Ada/Elmore	106							
Adams								
Boise/Gem								
Canyon/Washington								
Valley								
Region III	106							
Region IV								
Bannock/Franklin/ Caribou						119		
Bear Lake						119		
Region V						119		
Bonneville/Jefferson/Madison								48
Butte/Custer								
Fremont			26,627					
Lemhi								
Teton								636
Region VI			26,627					684
Unknown	33,502						5,403	
Total	153,101	61,991	26,627	7,645	5,596	119	144,164	684

(con.)

Table 20.--*Origin and destination of timber used (M bd. ft.) by the Idaho forest products industry by county, 1973*

Destination	Origin								
	Twin Falls	Valley	Ore.	Mont.	Wash.	Wyo.	Canada	Unknown	Total
Boundary				11,700			2,948		55,532
Bonner			3,070	4,530	53,822		220	1,525	202,746
Benewah					4,400			2,000	191,877
Kootenai					1,500				214,918
Shoshone								32,981	54,334
Region I			3,070	16,230	59,722		3,168	36,506	719,407
Clearwater								8,000	120,446
Idaho									209,859
Latah/Lewis/ Nez Perce					6,476			1,800	348,495
Region II					6,476			9,800	678,800
Ada/Elmore		233	1,377	27				19,168	46,989
Adams								23,620	43,992
Boise/Gem		11,699						95,071	141,925
Canyon/Washington			267		10,900			700	19,534
Valley		715						60,424	61,539
Region III		12,647	1,644	27	10,900			198,983	313,979
Region IV	195	45							9,505
Bannock/Franklin/ Caribou									1,302
Bear Lake									4,501
Region V									5,803
Bonneville/Jefferson/Madison								1,185	28,674
Butte/Custer									10,976
Fremont									38,447
Lemhi									30,027
Teton						80			816
Region VI						80		1,185	108,940
Unknown				9,726	5,403				108,069
Total	195	12,692	4,714	25,983	82,501	80	3,168	246,474	1,944,503

Table 21.--*Distance (miles) from plant to location of purchased logs for Idaho's forest products industry by county, 1973*

Plant Location	Maximum				Usual			
	Range	Mode	Median	Average	Range	Mode	Median	Average
Benewah	7-200	70	52	60.7	2-60	30,50	20	24.3
Bonner	40-100	75	75	78.3	20-60	40	40	37.9
Boundary	30-150	30	75	73.4	10-46	--	30	30.2
Kootenai	45-150	130	127	112	20-100	35	35	43.1
Shoshone	50-85	--	65	66.3	25-45	--	37	36.2
Clearwater	1-150	80	50	57.3	0-75	15	20	25.5
Idaho	15-100	15	45	48.8	2-60	5	15	21.9
Latah/Lewis/Nez Perce	1-120	60	60	45.0	0-80	20,30	30	29.7
Ada/Elmore	80-450	--	138	200.3	60-220	60	77	111.6
Adams	--	--	--	--	--	--	--	--
Boise/Gem	30-150	150	150	110.0	15-60	60	60	45.0
Canyon/Washington	--	--	--	--	--	--	--	--
Valley	10-90	--	45	47.5	3-45	--	25	24.5
Blaine/Camas/Gooding/ Minidoka/Twin Falls	50-252	--	88	119.3	25-125	--	40	54.0
Bannock/Caribou/ Franklin	14-70	--	35	38.5	14-150	20	20	22.8
Bear Lake	20-70	40	40	44.0	15-25	20	20	21.0
Bonneville/Jefferson/ Madison	75-85	80	80	80.0	30-75	--	50	53.6
Butte/Custer	55-250	--	115	133.8	30-80	30	46	50.3
Fremont	1-80	80	45	47.3	0-65	30	30	32.8
Lemhi	12-125	--	80	75.0	20-50	35	35	36.0
Teton	20-25	--	22.5	22.5	3-25	--	20	17.2

Table 22.--*Number of responses concerning problems in obtaining logs by type of firm and region for Idaho's forest products industry, 1973*

Response	Sawmills, plywood and chip mills						Cedar		Post/pole		Total
	Region						Region		Region		
	I	11	111	1V	V	V1	1	11	1-111	1V-VI	
Too large sales	4	2	4	1	4	7	2	6	--	--	30
Competition	17	4	4	1	1	2	4	1	3	--	37
High stumpage price	7	1	2	--	4	6	3	6	--	1	30
Weather	6	6	--	--	--	1	--	9	2	1	25
Environmental restrictions	1	1	--	1	--	6	--	--	1	--	10
Forest Service restrictions	8	4	3	2	2	4	--	5	2	3	33
Lack of raw material	5	1	7	--	--	--	5	1	7	6	32
Financing	2	1	1	--	--	1	--	--	--	--	5
Logging costs	1	--	1	--	1	3	--	--	--	--	6
Disposal of waste material that could be used	--	--	1	--	--	--	--	2	1	1	5
Other	1	--	--	--	--	--	--	3	--	2	6
No problems	3	6	2	1	1	2	--	2	2	--	19
Number of firms not responding	7	7	1	1	--	3	--	2	1	--	22

Table 23.--*Sales of Idaho lumber and lumber products (M bd. ft.) by county and destination, 1973*

County of origin	Destination							
	Local	Idaho	Mont.	Eastern Wash.	Western Wash.	Eastern Ore.	Western Wash.	Calif.
Boundary	77	4,185	233	0	0	0	0	0
Bonner	5,933	16,865	423	13,949	8,205	6,540	8,744	2,017
Benewah	10,867	423	303	704	0	47	0	23
Kootenai	33,428	1,515	1,958	4,956		133	2,953	1,604
Shoshone	5,000	406	136	1,627		406		136
Region I	55,305	23,394	3,053	21,236	8,205	7,126	11,697	3,780
Clearwater	530	600		1,020				
Idaho	6,189	28,757	3,837	275	1,673	1,137	2,823	3,914
Latah/Lewis/ Nez Perce	2,573	6,395	3,821	11,238		588	515	1,322
Region II	9,292	35,752	7,658	12,533	1,673	1,725	3,338	5,236
Ada/Elmore	35,282					280		
Boise/Gem	37	3,047						6,018
Adams	22	31,680						
Valley	460	28,047				10		
Canyon/Washington	0	9,800			5,000			
Region III	35,801	72,574			5,000	290		6,018
Region IV	5,628	22						
Bannock/Caribou/ Franklin	769							
Bear Lake	590							
Region V	1,359							
Bonneville/Jefferson/ Madison								
Butte/Custer	1,498	375						
Fremont	4,643	360	129					
Lemhi	2,358	9,490	4,016					
Teton	277							
Region VI	8,776	10,225	4,145					
Total	116,161	141,967	14,856	33,769	14,878	9,141	15,035	15,034

(con.)

Table 23.--*Sales of Idaho lumber and lumber products (M bd. ft.) by county and destination, 1973*

County of origin	Destination Utah	Wyo.	Other West	Mid. West.	East Coast	South	Canada	Unknown	Total
Boundary	0	2,985	0	35,820	13,180	5,970	0	0	62,450
Bonner	423	0	1,128	75,765	48,148	11,352	846	8,550	208,888
Benewah	0	0	7,985	48,559	25,771	3,452	47	0	98,181
Kootenai	1,095		51,096	92,415	84,483	22,704	2,189		300,529
Shoshone	136		136	32,987	12,078	4,615	271		57,934
Region I	1,654	2,985	60,345	285,546	183,660	48,093	3,353	8,550	727,982
Clearwater			4,320	12,204	25,000			14,069	57,743
Idaho	627	419	9,672	83,586	34,746	21,010	187	28,331	227,183
Latah/Lewis/ Nez Perce	1,029			183,873	108,814	48,135	1,103		369,406
Region II	1,656	419	13,992	279,663	168,560	69,145	1,290	42,400	654,332
Ada/Elmore	140			5,590	5,040	1,400			47,732
Boise/Gem					51,152			214,772	275,026
Adams									31,702
Valley								32,271	60,788
Canyon/Washington		1,400		2,100	700				19,000
Region III	1,540		2,100	6,290	56,192	1,400		247,043	434,248
Region IV		30	4,136					1,034	10,850
Bannock/Caribou/ Franklin	663								1,432
Bear Lake	1,860	500						2,001	4,951
Region V	2,523	500						2,001	6,383
Bonneville/Jefferson/ Madison			1,696		32,219				33,915
Butte/Custer	667		3,701	4,670					10,911
Fremont	5,275	6	10,500	26,775	5,250	3,150			56,088
Lemhi	5,780	790	6,300	4,266					33,000
Teton	360								637
Region VI	12,082	796	22,197	35,711	37,469	3,150			134,551
Total	19,455	4,730	102,770	607,210	445,881	121,788	4,643	301,028	1,968,346

Table 24.--*Costs and returns for lumber and lumber products manufacturers in Idaho, 1973*

Expenses and revenues	Average per firm	Average value per M bd. ft.
Gross revenue (all products sold)	$3,908,938.47	$220.74
Cash expenses		
Wages and salaries	688,433.60	38.87
Raw materials	1,445,838.43	81.65
Rentals	26,962.00	1.52
Repairs	79,763.20	4.50
Insurance	49,839.90	2.81
Marketing expense	13,176.10	.74
Transportation	62,106.83	3.51
Contract labor	167,985.20	9.49
Operating expenses	73,838.63	4.17
Supplies	103,018.57	5.82
Depreciation and taxes	43,841.63	2.48
Miscellaneous	30,333.70	1.17
Subtotal	$2,785,137.79	$157.27
Net cash income	1,123,800.66	63.46
Average value of inventory January 1, 1974	$2,804,073.42	
Average number of board feet used (M bd ft)	17,708	

Table 25.--*Sales of Idaho post/pole and cedar products by destination, 1973*

Destination	Sales								
	Posts (number)	Poles (number)	Shakes (squares)	Cedar posts (number)	Cedar rails (number)	Cedar pickets (bundles)	Cedar fencing (pieces)	Cedar shingles (bundles)	Mine props (number)
Idaho	240,476	117,542	13,900	63,190	30,000		33,200	1,800	
Montana	1,729	966	720	80			3,200		
Eastern Washington	110,100	29,320	7,095				3,200		
Western Washington			5,000						
Eastern Oregon		422							
Western Oregon		30,429		8,571	7,333				
California	453,816	7,923		9,950	10,000				
Utah	4,320	2,852							25,000
Wyoming	1,729	1,387	770	4,950			3,200		
Other Western States	75,470	76,328	2,400	1,330			175,000		
Mid-west	1,460	16,388	1,845	84,800	120,000	200	3,200		
East Coast		5,210	5,600	65,000	130,000	60,000			
South				5,000	10,000				
Canada	73,000								
Unknown	88,320	12,430							
Total	1,050,921	301,197	37,330	344,871	307,333	60,200	221,000	1,800	25,000
Number of firms reporting	15	16	11	10	6	2	3	1	1

Table 26.--*Costs and returns for post and pole plants in Idaho, 1973*

Expenses and revenues	Average per firm	Average value per M bd.ft.
Gross revenue	$407,269.38	$180.27
Cash expenses		
Labor	136,439.63	60.39
Raw materials	157,259.50	69.61
Repairs	16,631.88	7.36
Insurance	9,164.00	4.06
Marketing expense	2,062.50	.91
Transportation	6,087.50	2.70
Contract labor	38,228.25	16.92
Operating expense	14,264.13	6.31
Supplies	12,617.13	5.58
Preservatives	7,212.50	3.19
Depreciation and taxes	325.00	.14
Subtotal	$400,292.02	$177.17
Net cash income	6,977.36	3.10
Average inventory value January 1, 1974	$538,791.14	
Average quantity processed (M bd ft)	2,560	

Table 27.--*Costs and returns for cedar product manufacturers in Idaho, 1973*

Expenses and revenues	Average per firm	Average value per M bd. ft.
Gross revenue	$331,643.75	$178.54
Cash expenses		
Wages and salaries	$ 97,375.00	$ 52.42
Raw materials	139,625.00	75.17
Repairs	22,669.75	12.20
Insurance	497.38	.27
Marketing expense	8,185.50	4.41
Transportation	35,017.50	18.85
Contract labor	1,250.00	.68
Operating expenses	1,648.38	.89
Supplies	265.00	.14
Depreciation and taxes	375.00	.20
Miscellaneous	6,262.50	3.37
Subtotal	$313,171.00	$168.60
Net cash income	$ 18,472.75	$ 9.94
Average inventory value January 1, 1974	$ 86,166.66	
Average quantity processed (M bd. ft)	1,858	

Table 28.--*Unit (200 ft^3, 5.66 m^3) of residues produced by Idaho's forest products industry and utilization, 1973*

Type of residue	Number of firms reporting	Fuel	Pulp	Board products	Sold	Burned	Bedding	Other	Unknown	Total
Pulp chips	43	--	864,603	--	--	--	--	--	--	864,603 (4,897,111 m^3)
Particle board chips	2	--	--	17,400	--	--	--	--	--	17,400 (98,554 m^3)
Coarse chips	1	--	4,558	--	--	--	--	--	--	4,558 (25,816 m^3)
Bark	8	217,163	--	--	8,400	21,450	--	--	53,000	300,013 (1,699,274 m^3)
Log trim	3	6,200	6,000	--	--	--	--	15,250	--	27,450 (155,477 m^3)
Sawdust	17	86,183	64,392	--	--	3,238	3,850	--	42,780	200,443 (1,135,309 m^3)
Shavings	11	25,424	1,468	4,000	--	5,650	10,150	17,576	--	64,268 (364,014 m^3)
Sander dust	1	--	--	--	--	663	--	--	--	663 (3,755 m^3)
Total	--	334,970	941,021	21,400	8,400	31,001	14,000	32,826	95,780	1,479,398
(million meters^3)	--	(1.897)	(5.330)	(0.121)	(0.048)	(0.176)	(0.079)	(0.186)	(0.542)	(8.379)

Table 29.--*Units (200 ft^3, 5.66 m^3) of pulp chips produced by Idaho sawmills by area, 1973*

Area[1]	Number of firms reporting	M bd.ft. used	Units of chips produced	Units produced per firm	Units produced per M bd.ft. used
Region 1	23	484,541	291,530	12,675	0.6017
Region 11	11	550,545	445,998	40,545	0.8101
Region 1I1	6	212,289	87,424	14,571	0.4118
Region 1V-VI	3	65,144	39,651	13,217	0.6087
Total	43	1,312,519	864,603 (4,897,111 m^3)	20,107 (113,886 m^3)	0.6587 (3.731 m^3)

[1] Composition of regions identified in table 16.

Table 30.--*Origin and destination of residues (in units of 200 ft^3, 5.66 m^3) from Idaho's forest products industry by county, 1973*

County of origin	Destination							
	Idaho	Eastern Wash.	Western Wash.	Eastern Ore.	Western Ore.	Montana	Unknown	Total
Boundary	0	1,770	8,850	3,540	0	3,540	0	17,700 (100,253 m^3)
Bonner	--	3,727	92,068	0	6,000	11,802	4,500	118,097 (668,901 m^3)
Benewah	62,154	0	82,700	0	0	0	738	145,592 (824,633 m^3)
Kootenai	55,987	11,070	10,392	--	--	2,688	2,160	82,297 (466,130 m^3)
Shoshone	--	4,140	9.660	--	--	2,639	--	16,439 (93,110 m^3)
Region I	118,141	20,707	203,670	3,540	6,000	20,669	7,398	380,125 (2,153,028 m^3)
Clearwater	64,769	--	--	--	--	--	13,345	78,114 (442,438 m^3)
Idaho	100,186	--	--	--	--	--	--	100,186 (567,454 m^3)
Latah/Lewis/ Nez Perce	320,894	7,418	--	--	--	--	--	328,312 (1,859,559 m^3)
Region II	485,849	7,418	--	--	--	--	13,345	506,612 (2,869,450 m^3)
Regions III, IV, V, and VI		13,774	12,551	41,805	--	1,300	60,375	129,805 (735,216 m^3)
Total	603,990 (3,420,990 m^3)	41,899 (237,316 m^3)	216,221 (1,224,676 m^3)	45,345 (256,834 m^3)	6,000 (33,984 m^3)	21,969 (124,432 m^3)	81,118 (459,452 m^3)	1,016,542 (5,757,694 m^3)
Percentage of total	59.42	4.12	21.27	4.46	.59	2.16	7.98	100

APPENDIX B

SURVEY METHODS

SURVEY METHODS

Data for this study were obtained by interviewing forest products firms operating in Idaho during 1973. A master list of firms operating in Idaho was compiled from various published directories (Bundy 1970; Miller Freeman Publications 1973). This list was augmented from the list of firms interviewed by Williams (1964, 1967). Entries were checked by county extension agents and revised as necessary. Each identified firm was sent a questionnaire and subsequently interviewed by College of Forestry, Wildlife and Range Sciences personnel in the spring and summer of 1974. Of the 209 firms contacted, responses were not received from 15. Of the 15 nonrespondents, 10 were sawmills sawing less than 1,000 board feet, one was a chipper whose production was reported elsewhere, two were cedar processors, and two could not be located.

Several weaknesses in the data should be noted:

1. Some parts of the questionnaire were filled out more completely than others. Most firms answered questions concerning general operating characteristics and timber volumes used, but many either were not able or willing to provide the expense and revenue information.

2. Some of the larger firms operating plants at several locations did not provide all of the information requested on a plant-specific basis. Data provided for multiplant operations were adjusted to a plant-specific basis when possible. These adjustments may have resulted in some error at the county level, but any biases were eliminated when county data were aggregated.

3. Many mills did not have records that would provide the detailed data requested. Therefore, the survey relied on memory and judgment.

4. Units of measure were not always uniform, particularly in the post/pole and cedar businesses. Therefore volumes were converted to a uniform unit of measure (Dilworth 1973; Idaho State Board of Vocational Education 1974).

Readers reviewing this publication should remember that the forest products industry is dynamic--established firms close and new firms start every year. The industry description, therefore, should be viewed as one instance--1973--in an industry of continual change. Readers should also know that in 1973, prices for timber and timber products were at an all-time high. This was followed by a period of depressed prices (late 1974 and 1975) and subsequent recovery (late 1976). This cyclical price movement affected every part of the forest products industry--the number of operating firms, volume of timber, costs, and returns. Therefore, any extrapolation of the 1973 findings to other years should be done cautiously.

Godfrey, E. Bruce, Ervin G. Schuster, and Enoch F. Bell. 1980. Idaho's forest products industry, 1973. USDA For. Serv. Gen. Tech. Rep. INT-80, 42 p. Intermt. For. and Range Exp. Stn., Ogden, Utah 84401.

A census of the Idaho forest products industry in 1973 showed that almost two billion board feet of timber was used by the industry in that year. Sawmills processed 70 percent of this amount and 45 percent of it was supplied by the USDA Forest Service. Most of the lumber, plywood, veneer, and cedar products were shipped to the eastern United States. Other characteristics discussed in the report include the number, production, location, equipment, employment, and ownership of firms with their species, source, and quantities of raw materials including residues.

KEYWORDS: sawmills, residues, employment, post and poles, cedar products.

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The Intermountain Station, headquartered in Ogden, Utah, is one of eight regional experiment stations charged with providing scientific knowledge to help resource managers meet human needs and protect forest and range ecosystems.

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